

CLEAN VERSION OF THE CLAIMS

1-116. (Previously Cancelled)

117. (Amended) A device comprising:

at least one vertically oriented carbon nanotube embedded in a silicon-based substrate without protruding beyond the said substrate in air.

118. (Previously Presented) A device of claim 117, wherein the said substrate material comprises a member of the class consisting of undoped silicon, doped silicon, crystalline silicon, polysilicon, silicon nitride, undoped silicon dioxide, and doped silicon dioxide.

119. (Previously Presented) A device of claim 117, wherein the said carbon nanotube is fabricated directly within a template in the said substrate.

120. (Previously Presented) A device of claim 117, wherein said vertically oriented carbon nanotube is at least partially electrically isolated from the said substrate.

121. (Currently Amended) A device comprising:

at least one vertically oriented carbon nanotube;

at least one horizontal conductive layer, wherein the said horizontal conductive layer is electrically coupled to said vertically oriented carbon nanotube;
and

wherein the said horizontal conductive layer includes patterned lines.

122. (Cancelled) A device of claim 121, wherein the said horizontal conductive layer includes patterned lines.

123. (Cancelled) A device of claim 121, wherein the said horizontal conductive layer includes a blanket deposited film.

124. (Previously Presented) A device of claim 121, wherein said carbon nanotube is conductive.

125. (Previously Presented) A device of claim 121, wherein said horizontal conductive layer material comprises a member of the class consisting of aluminum, copper, tungsten, titanium, nickel, chromium, and their alloys.

126. (Currently Amended) A device comprising:

- at least one vertically aligned carbon nanotube, wherein said vertically aligned carbon nanotube is fabricated within vertically aligned holes within a substrate material;

- at least one horizontal conducting interconnect, wherein said interconnect is electrically coupled to said vertically aligned carbon nanotube; and

- wherein a plurality of said vertically aligned carbon nanotubes form a pattern in the said substrate material.

127. (Previously Presented) A device of claim 126, wherein said substrate material comprises a member of the class consisting of silicon, silicon nitride, silicon dioxide, aluminum, alumina, and gallium arsenide.

128. (Cancelled) A device of claim 126, wherein a plurality of said vertically aligned carbon nanotubes form a pattern in the said substrate material.

129. (Currently Amended) A device comprising:

- a first electronic device having at least one logic device;

- a second electronic device having at least one logic device; and

- at least one carbon nanotube, wherein the said carbon nanotube is electrically coupled to said first electronic device and said second electronic device.

130. (Previously Presented) A device of claim 129, wherein said carbon nanotube is a vertically oriented carbon nanotube.

131. (Previously Presented) A device of claim 129, wherein said carbon nanotube is a horizontally oriented carbon nanotube.

132. (Cancelled) A device comprising:
at least one vertically oriented carbon nanotube; and
at least one horizontally oriented carbon nanotube, wherein the said horizontally oriented carbon nanotube is electrically coupled to the said vertically oriented carbon nanotube.
133. (Currently Amended) A device having plurality of carbon nanotubes in a substrate comprising:
a first carbon nanotube;
a second carbon nanotube; and
wherein said first carbon nanotube crosses path with said second carbon nanotube at a point such that said first carbon nanotube and said second carbon nanotube are electrically coupled.
134. (New) A device comprising:
at least one vertically oriented carbon nanotube embedded in a substrate, wherein the said nanotube is protruding from the said substrate;
at least one horizontal conductive layer, wherein the said horizontal conductive layer is electrically coupled to said vertically oriented carbon nanotube;
and
wherein the said horizontal conductive layer includes patterned lines.
135. (New) A device comprising:
at least one vertically oriented carbon nanotube, wherein said carbon nanotube is conductive; and
at least one horizontal conductive layer, wherein the said horizontal conductive layer is electrically coupled to said vertically oriented carbon nanotube.
136. (New) A device of claim 135, wherein the said horizontal conductive layer includes a blanket deposited film.